

REMARKS

Claims 1-23 are pending in this application. All claims have been rejected. Applicants gratefully acknowledge the Examiner allowing Claim 14, if that claim is rewritten in the independent form.

The Examiner rejected Claims 1, 6, 12, 15, 17, and 20-23 under 35 U.S.C. §112 as being indefinite. All informalities of the rejected claims have been corrected.

The Examiner also rejected Claims 1-10, 12, 15, 17, 20-21, and 23 under 35 U.S.C. §102(a) as being anticipated by "Spatial Data Mining: Progress and Challenges Survey Paper" (Koperski); Claims 11 and 22 under 35 U.S.C. §103(a) as being unpatentable over Koperski; Claims 13 and 16 under 35 U.S.C. §103(a) as being unpatentable over Koperski in view of "Clustering for Mining in Large Spatial Databases" (Ester); and Claims 18 and 19 under 35 U.S.C. §103(a) as being unpatentable over Koperski in view of "Finding Aggregate Proximity Relationships and Commonalities in Spatial Data Mining" (Knorr).

Koperski describes mining knowledge from large amounts of spatial data, where huge amounts of spatial data have been collected in various applications, ranging from remote sensing, to geographical information systems, computer cartography, environmental assessment and planning, etc. The present application on page 2, starting at line 1, references Koperski in its discussion of existing conventional spatial data mining systems. The benefit of the invention over prior art is described on page 3, lines 19-25 of the specification as follows:

Conventional data mining systems can not, for example, cope with a search for "a radius extending outward from a convenience store used to maximize the installation density of automatic teller machines within a unit distance in a district A" or a search to ascertain "the orientation of a route along which heavy air pollution spreads from a garbage disposal area".

The novel techniques as set forth in the independent claims of the present invention resolve the shortcomings of prior art by calculating a distance or an orientation requested by analyzation businesses, not by deriving a correlated spatial rule using distances or orientations calculated in advance, as disclosed in the prior art.

The Examiner cited Koperski section 2.1 Generalization Based Knowledge Discovery, SPACIAL DATA DOMINANT GENERALIZATION, which describes generalizing temperatures in some range to descriptive words like "moderate" or "hot", as teaching the calculating a distance or an orientation block element of the inventive claims. This is not so. The present invention teaches a technique for quickly calculating a useful distance or an orientation requested by users. The present invention derives the distances or orientations by analysis of stored information, not through use of measurements calculated in advance.

Neither the section referenced by the Examiner nor any other section of Koperski teach or describe

"calculating a distance or an orientation block" recited in Claims 1 and 6;
"calculating a distance, based on said intermediate table generated by said intermediate table generation means" recited in Claim 12;
"calculating an orientation, based on said intermediate table generated by said intermediate table generation means" recited in Claim 15;
"calculating said optimal distance or said optimal orientation" recited in Claim 17;
"calculating distances originating at said starting points or at said starting point groups" recited in Claim 20;
"calculating orientation blocks beginning at said starting points or said starting point groups" recited in Claim 21; and
"calculating a distance measured from said start point or said starting point group, or an orientation block recited" in Claim 23.

With regard to Claims 11 and 22, the Examiner cites Koperski's Algorithm for Multiple level Association Rules. However, similar to the discussion above, that algorithm's description does not describe calculating distances. Looking for objects whose minimal bounding rectangles are located in a distance no greater than a threshold, does not call for calculating distances, but rather possible comparison of stored information. Accordingly, Koperski does not teach or disclose "calculating a distance between each starting point and each query point" recited in Claims 11 and 22.

Therefore, independent Claims 1, 6, 11, 12, 15, 17, and 20-23 are believed to overcome the rejection and are now believed to be allowable. Without conceding the patentability per se of dependent Claims 2-5, 7-10, 13, 14, 16, and 18-19, these are likewise believed to be allowable by virtue of their dependence on their respective independent claims. Reconsideration and withdrawal of the rejections of Claims 1-23 is respectfully requested.

Accordingly, all of the claims pending in the Application, namely, Claims 1-23, are believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicants' attorney at the number given below.

Respectfully submitted,



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